CLAIMS

1. A nucleic acid molecule encoding human Akt-3 protein or a functional equivalent, derivative or bioprecursor thereof, comprising the amino acid sequence illustrated in SEQ ID No. 3.

sub a2

2. A nucleic acid molecule according to claim 1 which is a DNA molecule, and preferably cDNA.

3. A nucleic acid molecule according to claim 1 or 2 comprising the nucleotide sequence illustrated in SEQ ID No. 1.

4. A nucleic acid molecule according to claim 1 or 2 comprising the nucleotide sequence in SEQ ID No. 2.

5. An antisense molecule capable of hybridising to the molecule according to any of claims 1 to 4 under high stringency conditions.

6. A human Akt-3 protein or a functional equivalent, derivative or bioprecursor thereof, comprising an amino acid sequence as illustrated in SEQ ID No. 3.

sub a3

7. A human Akt-3 protein or a functional equivalent, derivative or bioprecursor thereof encoded by a nucleic acid molecule according to any of claims 1 to 4.

8. A human Akt-3 protein according to claim 7 comprising the amino acid sequence as illustrated in SEQ ID No. 3.

sub a4

9. An expression vector comprising a nucleic acid molecule according to claim 2 or 3.

10. An expression vector according to claim 9 comprising an inducible promoter.

Sub a5

11. An expression vector according to claim 9 ~~or 10~~ comprising a sequence encoding a ~~reporter~~ molecule.

12. A nucleic ~~acid~~ molecule according to any of claims ~~1~~ to 5 for use as a medicament.

13. Use of a nucleic acid molecule according to any of claims 1 to 5 in the preparation of a medicament for treating cancer.

14. A human Akt-3 protein according to any of claims 6 to 8 for use as a ~~medicament~~.

15. Use of a human Akt-3 protein according to any of claims 6 to 8 in the preparation of a medicament for treating cancer.

Sub a6

16. A pharmaceutical composition comprising a nucleic acid molecule according to any of claims 1 to 5 or a human Akt-3 protein according to any of claims 6 to 8 together with a pharmaceutically acceptable carrier diluent or excipient therefor.

17. A host cell or organism, transformed or transfected with an expression vector according to any of claims 9 to 11.

18. A transgenic cell, tissue or organism comprising a transgene capable of expressing a human Akt-3 protein according to any of claims 6 to 8.

19. A human Akt-3 protein expressed from the cell or organism according to claim 17 or 18.

20. An antibody capable of binding to a human Akt-3 protein or an epitope thereof according to any of claims 6 to 8.

21. An antibody according to claim 20 which is a monoclonal antibody.

22. An antibody according to claim 20 or 21 for use as a medicament.

23. Use of an antibody according to claim 20 or 21 in the preparation of a medicament for treating cancer, or other diseases or conditions associated with human Akt-3 protein expression.

24. A kit for detecting human Akt-3 protein in a sample which protein comprises a sequence according to any of claims 6 to 8, said kit comprising an antibody according to claim 20 or 21 and means for contacting said antibody with said sample.

25. A method of identifying compounds which selectively inhibit human Akt-3 protein mediated promotion of cell survival said method comprising:

i) providing a cell transformed with an expression vector activating the Akt-3 pathway that survives in the presence or absence of a survival factor compared to a control cell which has not been transformed with said vector and will die in the absence of said survival factor,

ii) contacting each of said cells with a test compound following the removal of said cells from said survival factor, wherein death of said transformed cell is indicative of selective inhibition of said compound on the survival promoting human Akt-3 pathway.

26. A method of identifying compounds which selectively inhibit human Akt-3 protein mediated promotion of cell survival, said method comprising:

i) providing a cell transformed with an expression vector activating the Akt-3 pathway in addition to a control cell which has not been transformed with said vector,

ii) contacting each of said cells with a death inducing agent, whereby death of said control cell and survival of said transformed cell is indicative of the survival promoting activity of the activated Akt-3 pathway,

iii) contacting said transformed cell with a test compound, wherein death of said cell is indicative of selective inhibition of said compound on the survival promoting human Akt-3 pathway.

27. A compound identifiable according to the method of claims 25 or 26.

28. A compound according to claim 27 for use as a medicament.

29. Use of a compound according to claim 27 in the manufacture of a medicament for treating diseases associated with human Akt-3 protein expression.

30. A method of identifying agents which influence the activity of a human Akt-3 protein according to any of claims 6 to 8, said method comprising contacting said human Akt-3 protein with a substrate therefor in the presence of a test compound and a phosphate source, and monitoring for any phosphorylation of said substrate.

31. A method according to claim 30 wherein said Akt-3 protein is provided as a fusion or epitope tagged protein having a domain capable of phosphorylating a known substrate.

32. A method according to claim 30 wherein said Akt-3 protein is provided as a fusion molecule of GST and human Akt-3.

33. A method of identifying agents which influence the activity of a human Akt-3 protein according to any of claims 6 to 8, said method comprising contacting a phospholipid or a surrogate or functional equivalent thereof, with a PH domain of a human Akt-3 protein according to any of claims 6 to 8 in the presence of an agent to be tested and monitoring for any binding of said phospholipid, surrogate or functional equivalent thereof with said PH domain of said Akt-3 protein.

34. A method according to claim 33 wherein said phospholipid comprises phosphatidylinositol 3,4,5-triphosphate.

35. An agent identifiable according to the method of claim 33 or 34.

36. An agent according to claim 35 for use as a medicament.

37. Use of an agent according to claim 35 in the preparation of a medicament for treating diseases associated with human Akt-3 expression.

38. A method of treating diseases associated with human Akt-3 activity said method comprising administering to an individual suffering from said

disease a compound that inhibits the function and/or expression of a human Akt-3 protein according to any of claims 6 to 8, in a sufficient concentration to reduce the symptoms of said disease.

39. A method according to claim 38 wherein said compound is any of an antisense molecule according to claim 5, an antibody according to claim 21 or 22, a compound according to claim 27 or an agent according to claim 35.

40. A method for making a pharmaceutical formulation for the treatment of diseases associated with human Akt-3 protein expression, said method comprising:

a) contacting candidate compounds with a host cell that expresses human Akt-3 protein,

b) selecting a compound identified in step a) which binds to human Akt-3 protein,

c) manufacturing bulk quantities of the compound selected in step b), and

d) formulating the compound manufactured in step c) in a pharmaceutically acceptable carrier.

Sub a12

41. A method of identifying a compound which modulates Akt-3 kinase activity, comprising:

a) contacting said Akt-3 with a substrate thereof in the presence of a radiolabelled phosphate source, and the compound to be tested,

b) stopping the reaction by the addition of kinase inhibitor in the presence of SPA beads,

c) monitoring the signal from said beads compared to a control which has not been contacted with said compound.

42. A method of identifying a compound which modulates Akt-3 activity, comprising:

a) contacting said Akt-3 with a substrate thereof in the presence of a radiolabelled phosphate source, and the compound to be tested,

b) stopping the reaction,

c) filtering the reaction mixture through phosphocellulose cation exchange paper, and

d) monitoring the signal from said filter paper compared to a control which has not been contacted with said compound.

and a13>